Banking Transaction Management System

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What is Banking Transaction Management System?

- A relational database project built in SQL Server Management Studio
- Focuses on storing, retrieving, and managing banking data efficiently
- Implements real-life banking logic through queries and stored procedures

Designed to manage customers, accounts, transactions, loans, employees & branches

Project Goals & Objectives

Objectives

There are several main objectives of Banking Transaction Management System :

- Design normalized relational tables with proper keys & constraints
- Handle banking operations like deposits, withdrawals, loans, and account management
- Apply aggregate functions, joins, and stored procedures
- Make a ready-to-integrate backend for future frontend applications

Database Tables Overview

Table Name	Description
Customers	Stores customer details
Accounts	Stores account details linked with customers
Transactions	Records deposits & withdrawals
Loans	Manages loan details & status
Employees	Bank staff information
Branches	Branch details with managers

What Operations Are Covered?

- View customer accounts & balances
- Record transactions with notes
- Manage active/inactive accounts
- Monitor loans with status updates
- Store branch & employee details
- Perform advanced queries for reporting

View transactions of a customer

```
SELECT c.FullName, t.TransactionType, t.Amount
FROM Customers c
JOIN Accounts a ON c.CustomerID =
a.CustomerID
JOIN Transactions t ON a.AccountID =
t.AccountID;
```

Results | Messages

	FullName	TransactionType	Amount
1	Ali Raza	Deposit	2000.00
2	Sana Khan	Withdraw	1000.00
3	Bilal Ahmed	Deposit	5000.00
4	Ayesha Noor	Withdraw	2000.00
5	Usman Tariq	Deposit	3000.00
6	Zara Iqbal	Deposit	4500.00
7	Hamza Saeed	Withdraw	1500.00
8	Mehwish Ali	Deposit	10000.00
9	Faizan Rauf	Withdraw	700.00
10	Noor Fatima	Deposit	2500.00

Show Loan Types with Total Approved Loan Greater Than 50,000

```
SELECT LoanType, SUM(LoanAmount) AS
TotalLoanByType
FROM Loans
WHERE Status = 'Approved'
GROUP BY LoanType
HAVING SUM(LoanAmount) > 50000;
```

Results | Messages

	LoanType	TotalLoanByType
1	Auto	75000.00
2	Home	55000.00
3	Personal	80000.00

Stored Procedure to List Employees by Position

```
CREATE PROCEDURE GetEmployeesByPosition
    @Position NVARCHAR(50)
AS
BEGIN
    SELECT * FROM Employees
    WHERE Position = @Position;
END;
-----------------------------------------

EXEC GetEmployeesByPosition @Position =
'Manager';
```

Results | Messages

	EmployeeID	FullName	Position	Email	Phone	HireDate
1	1	Ahmed Rafi	Manager	ahmed@bank.com	03112223333	2025-07-13

How many customers are registered in each city?

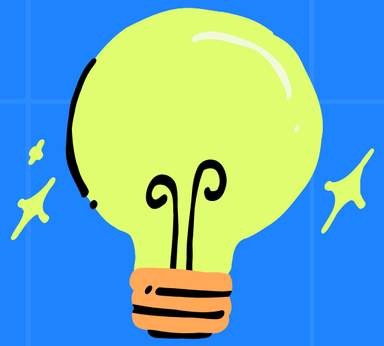
```
SELECT Address AS City, COUNT(*) AS
TotalCustomers
FROM Customers
GROUP BY Address;
```

Results | Messages

	City	TotalCustomers
1	Faisalabad	1
2	Gujranwala	1
3	Islamabad	1
4	Karachi	1
5	Lahore	1
6	Multan	1
7	Peshawar	1
8	Quetta	1
9	Rawalpindi	1
10	Sialkot	1

Which branches were established before 2015, and who manages them?

```
SELECT BranchName, City, ManagerName,
EstablishedYear
FROM Branches
WHERE EstablishedYear < 2015;
```

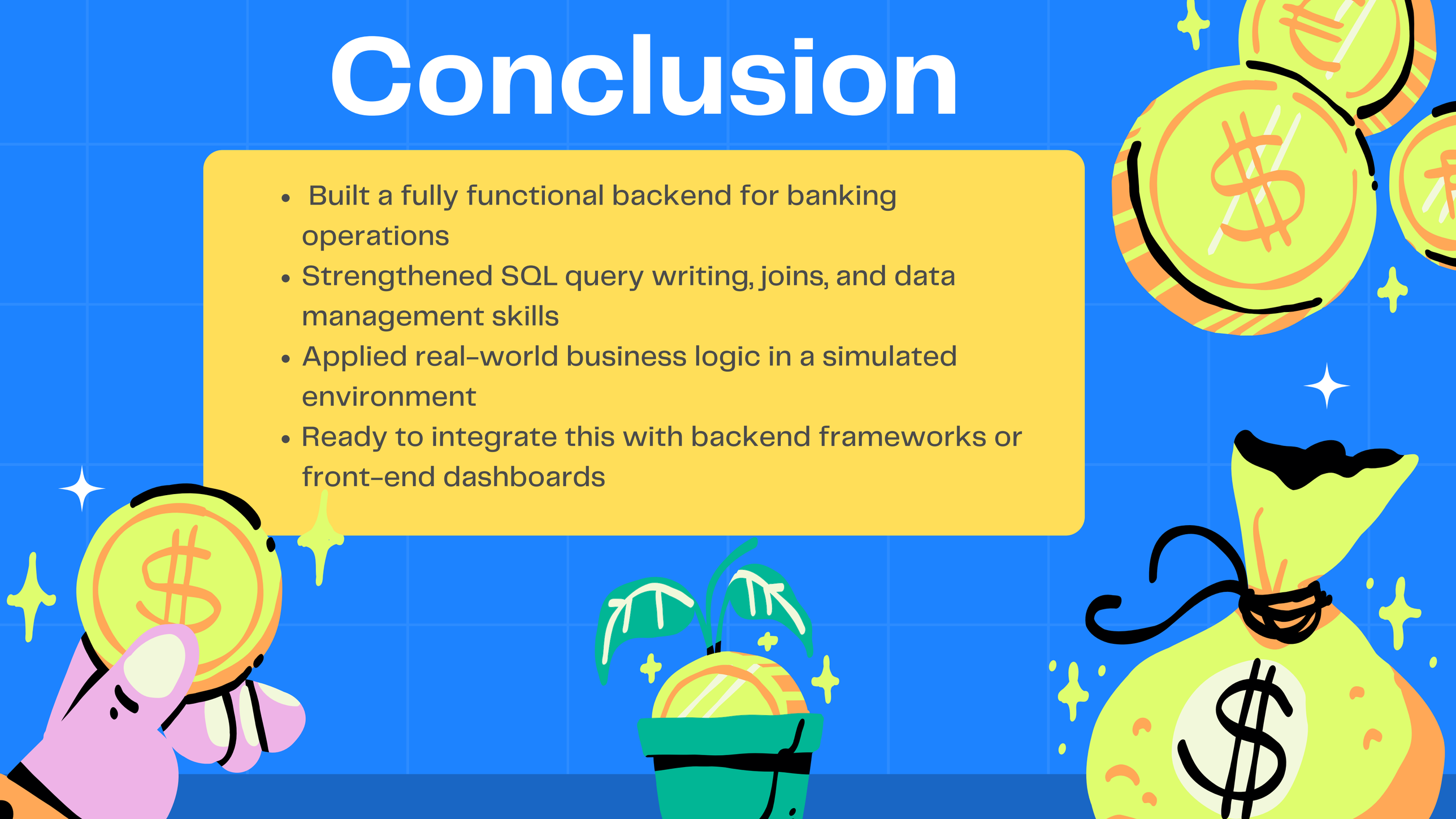


Results | Messages

	BranchName	City	ManagerName	EstablishedYear
1	Main Branch	Lahore	Ahmed Rafi	2010
2	North Branch	Islamabad	Sadia Yousaf	2012
3	South Branch	Karachi	Rehan Tariq	2011
4	West Branch	Quetta	Imran Ali	2013
5	City Branch	Multan	Umar Sadiq	2014

Conclusion

- Built a fully functional backend for banking operations
- Strengthened SQL query writing, joins, and data management skills
- Applied real-world business logic in a simulated environment
- Ready to integrate this with backend frameworks or front-end dashboards



Thank You